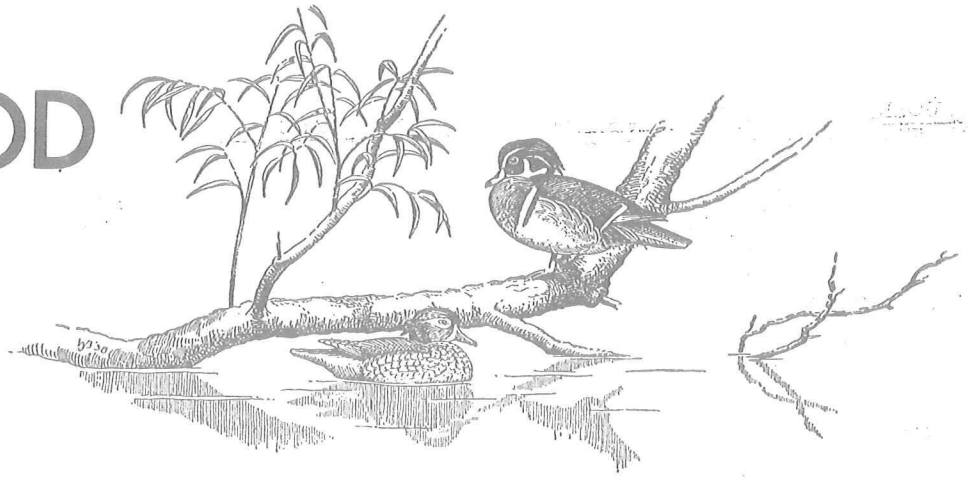
The WOOD DUCK



HAMILTON NATURALISTS' CLUB

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DUTCH ELM DISEASE

The Dutch elm disease was first reported from Holland in 1918. It is suspected that the fungus which causes the disease was introduced into Europe from Asia during the First World War. The disease spread rapidly through Belgium, France, and Germany, and by 1927 it had appeared in England. Subsequent to that the disease was found in Italy, Spain, Czechoslovakia, Rumania, Sweden and Denmark.

It first made its appearance on this continent in Ohio in 1930, but at that time an extensive erradication and scouting program is believed to have erradicated the disease.

In 1933, the first case of Dutch elm disease was found in New Jersey, and from this time on it had spread throughout the United States.

In Canada, the disease was not discovered until 1944; when an infected tree was found near Soral, Quebec. In this area the indications are that the disease was introduced directly from Europe rather than from the U. S. A. This original infection spread through Quebec and into Ontario.

Introduction of the disease in Ontario also occurred in the south-western section of the Province in 1950. Here, the disease, together with the European vector, has spread into Canada from the United States. At the present time there are 32 counties in Ontario in which the disease has been found, although there has not been a confirmed report from some of these counties for several years.

Hosts

All species of American and European elms are hosts to the Dutch elm disease fungus, although there is a wide range in their susceptibility. No American elm is resistant, although several European strains, the Christine Buisman and the Bea Schwarz, are relatively resistant, but not immune. Chinese and Siberian elms are also considered to be resistant.

Symptoms and Diagnosis of Dutch Elm Disease

The first symptoms of the disease are wilting, curling, and yellowing of leaves on one or more branches, a condition called "flagging." These symptoms are followed usually by premature falling of leaves and death of the wilting branches. Some affected trees may have a few branches wilt at a time and may die slowly over a period of years. Other trees may have most or all of their branches wilt at one time and may die within a few weeks.

Brown streaking develops in the sapwood of wilting branches. In a cross section of a branch, this browning may appear as a series of dots in a single wood ring; in some cases the dots are so abundant that the entire wood ring appears brown. Brown discoloration occurs most frequently in spring wood of the current season's growth. In trees that wilt in early summer the brown discoloration may not be noticeable when the branch wood is examined in cross section. However, this discoloration is usually conspicuous as fine streaks on the surface of the wood when the bark is carefully peeled from a wilting branch. The outer surface of sapwood on trunks may be brown.

The presence of brown discoloration in young sapwood is used in the field as a symptom of Dutch elm disease. However, this symptom cannot be taken as final proof of the disease, since similar discoloration of the sapwood is produced by several other wilt diseases of elm. To determine which wilt disease is affecting elm it is necessary to make laboratory tests of specimens from the diseased tree. These specimens, ½" to 1" in diameter and 8" to 10" long, should be obtained from living branches showing wilting leaves. Unless they show the brown streaking mentioned above the fungus is not likely to be present. Samples which do not conform to this description are not suitable for testing and when cultures are made from unsuitable samples the results are almost always inconclusive.

Causal Organism

Dutch elm disease is caused by the fungus Ceratocystis ulmi ("Ceratostomella ulmi). As a parasite it develops in the water-conducting vessels of the sapwood where it produces spores and a toxin and these are carried in the sap stream to distant parts of the tree. The toxin causes the death of the branches with subsequent wilting and discoloration of the leaves. In addition to the toxic effect it is probable that the growth of the fungus itself results in a partial stoppage of the vessels, thus contributing to to wilt of the leaves. After death of the host tissue the fungus continues to grow as a saprophyte, producing a second type of spore on the inner surface of the bark, the outer surface of the wood, and in insect galleries in the bark or wood.

The spores that are borne in insect galleries are sticky and so are not transmitted by air currents as is often the case with some fungous spores. Instead they adhere to the bodies of

emerging adult beetles and are introduced into other elm trees when the beetles feed on or enter into the bark to establish brood tunnels. In Ontario there are two insect vectors, the native elm bark beetle Hylurgopinus rufipes and the small introduced European elm bark beetle, Scolytus multistriatus. Both beetles breed in and under the bark of dying or recently dead elm trees. The native elm bark beetle completes one or more generations in a year and passes the winter either as a larva or as an adult. The adults that emerge in the fall enter the trunk and larger branches of healthy elm trees to overwinter, frequently boring through the bark to the surface of the sapwood. The overwintering adults emerge during May to deposit their eggs, while the adults from the overwintering larvae appear during June or early July. The smaller European elm bark beetle passes the winter mainly in the larval stage, with the adults beginning to appear in early June.

In addition to the transmission of the causal fungus by bark beetles, the disease may occasionally pass from one tree to another by means of root grafting. This, of course, can only occur when healthy trees are growing in proximity to diseased trees.

Control

The methods of control are spraying and sanitation. The first prevents or reduces feeding by the beetles on healthy elm trees during the critical spring and early summer period, while the second reduces the number of bark beetles by destroying elm material suitable for breeding.

It is probably best to use both spraying and sanitation in a control program, although some agencies use one or the other depending on local facilities, or availability of monies for such programs.

At the present time, evidence does not indicate that the elm will be eliminated from the landscape as was the American chestnut due to the ravages of Endothia parasitica, the causal organism of chestnut blight. It is quite reasonabble to expect, however, that in local areas many elms could be destroyed, causing great loss both in money and in the beauty of an area. In fact, many elms have already been destroyed, but the large number which remain, even in areas where the disease has been present for some years, indicates that while control programs should be initiated where possible, we would not be fighting a losing battle. Control can save the elms, or at least reduce losses to such a low level that no more trees are being killed than would normally be destroyed due to other causes.

The above article was prepared at the Southern Research Station at Maple, Ont., of the Department of Agriculture Science Service under the leadership of James Reid, Research Officer.

DENIZENS OF THE DEEP FREEZE

On January 30, a screech owl was brought to Drumlin Farm Sanctuary at South Lincoln, Mass; it had been found in the road, apparently hit by a car. In examining the bird it was noted that its head hung completely limp and that both legs and one wing were stiff. The conclusion was that the bird was dead and the unfortunate owl was placed in the freezer kept for that purpose until someone had the time to make a mount of it.

Four days later when Dr. Wm. H. Drury, Director of the Society's Hathaway School of Conservation, next opened the freezer, he was greeted by a pair of flashing eyes and a snapping bill. There was the owl - big as life and twice as handsome - looking exceeding well-fed. Probably he never had it so good! Perpetual darkness and the inexhaustible food supply of this excellent recuperative ward was all his heart could desire. The freezer temperature was a comfortable 0 degrees (It was 5 degrees outside at the time). He was transferred to the out-patient department, warm, fat, and healthy until his eye recovered from the damage suffered by being hit by the car. Moral: Given an adequate food supply it doesn't much matter how cold it gets for an owl.

People get great enjoyment out of feeding winter birds and ut is really true that food supply, not cold, makes the difference between survival or not.

--from Massachusetts Aud. Soc. Bulletin

The above article was reprinted from Los Angeles "Western Tanager".

NEW BOOKS FOR CLUB MEMBERS AT THE HAMILTON PUBLIC LIBRARY

Annie J. Hunt

In Elephants, Richard Carrington gives a comprehensive survey of elephant science and lore. It is more than an account of their natural history. It deals with other aspects: such as, the part the elephant has played in the history of religion, art, mythology, literature and even music and its role as a faithful servant of man and the value of the ivory of its tusks

Animal tracks and hunter signs is an introduction to trailint. Julia M. Seton has collected in one very readable volume the track diagrams and notes of the many beasts, reptiles, and birds of America made by Ernest Thompson Seton during his seventy years observing life in the wilds. It includes a chapter on blazes and Indian signs.

W. S. Bristowe in the World of Spiders offers an enthusiastic account of British spiders generally and how they are related to the world around them as well as of the many superstii-

tions concerning them.

In May of 1958 the American museum of natural history, New York, unveiled the Hall of North American forests, the most comprehensive exhibit of its kind in the world. The book The living forest by Jack McCormick, is based on the exhibits and the information compiled concerning them. The chapter headings include forest insects, forest tree diseases, weather in the forest, stories a stump can tell, and the forests of North America. It is a simple accurate story of the forest not considered as an area covered with trees but as a complex community composed of plants and animals. This book, well-illustrated with drawings by Matthew Kalmenoff, makes interesting reading for amateur naturalists.

A companion work to Hammond's nature Atlas of America, published a few years ago is Hammond's pictorial library of pets, plants, and animals, by E. L. Jordan, with the assistance of a group of specialists in the various branches of the natural sciences. It covers the realm of domesticated nature. The most important section of the book is the 362 full-colour paintings of domestic animals and birds, exotic fish, terrarium pets, vegetables garden flowers, field crops and nuts. The text which accompanies each picture is brief but useful for quick reference. There is also a 40-page general survey of animals and plants raised and grown in the United States.

Nature lovers will welcome the impressive four volume set, entitled, the Illustrated history of the natural sciences, sponsored by the American museum of natural history and edited by E. M. Weyer. It contains over 3000 illustrations and many fine articles written by some of the country's outstanding popularizers of natural history. It presents the story of the universe, the earth and its inhabitants, together with their relation to each other. This encyclopedia does not circulate and is therefore available in the Arts and Science department to be consulted at any time.

FUTURE EVENTS OF THE SENIOR CLUB

MEETINGS

Monday, May 11th, 1959--Member's Night. Members are invited to show pictures and tell of interesting activities during the year. Please contact Miss Betty Dirkin.

FIELD EVENTS

Saturday, May 2nd, 1959--Spring hike for wild flowers at Hendrie Valley. Meet at 2.00 p. m. at parking lot behind new Botanical Gardens Building on No. 2 Highway. Leader: A. E. LeWarne, JA 7-2219.

Wednesday, May 20, 1959--Walk to see flowering shrubs and trees. Meet at Art Gallery at 7.00 p. m. Leader: Royal Botanical Gardens Staff.

Saturday, May 23rd, 1959--Lake Erie Bus Hike. Bring two lunches. 7.45 at Bus Station. Leader: Eunice Smillie, NO 2-4568.

Sunday, May 24th, 1959-- Spring Bird Count. Organizer: John Cumming, LI 9-7886.

Saturday, June 6th, 1959--Auto Hike to Hubert Moore's farm. Good area for birds, plants, and ferns. Meet at High Level Bridge at 9,00 a. m. Leader: David K. Powell, NE 4-5045.

VICTORIA DAY NATURE WEEK-END CAMP

Friday Evening, May 16, to Monday, May 19, 1959

Outstanding leaders in birds, wildflowers, mammals, trees, reptiles, amphibians, insects, and conservation. Evening programmes will include sing-songs, talks on nature, camp fires, and astronomy. Campers will live in cabins. Total cost is $15.00 and includes food, lodging, and instruction. Bring your own bedding. Please send registration forms as soon as you can to Miss Betty Dirkin, Registrar, Hamilton Nature Club, Main Post Office, Box 384, Hamilton. The Camp will hold only a limited number. Already one third of the quota have registered. An indication of the interest is that people have registered from as far east as Peterborough and as far West as London.

Don't miss this opportunity to become more familiar with the world of nature.

Through error, the names of contributors of articles to April Wood Duck were omitted.

"Birds and Altitude" was by Dr. Robert MacLaren.

"Naturalists' Guide" was by Miss E. LeWarne.

JUNIOR CLUB NEWS

President	Robert Curry	LI 5-5557
Vice President	Ralph Idema	FU 3-6411
Secretary	Caroline Lawson	MA 8-8135
Vice-Secretary	Norma Allewell	MA 8-6406
Records Secretary	Don Campbell	JA 9-4753
Study Area Director	John Miles	JA 2-6160
Representatives for those under 14 years	Marina Idema	FU 3-6411
	Alfred Senior	LI 5-1442

THANKS TO THE RETIRING EXECUTIVE

I wish to thank the 1958-1959 executive of the Hamilton Junior Naturalists' Club for the excellent way in which they have managed their meetings. The President has been an ex-

cellent chairman in running the programme, introducing the speakers, arranging for someone to thank the speakers, and in making announcements. The Secretary has been most facile in producing and reading the minutes and has also written letters of thanks to the guest speakers. The Records Secretary has continued the thorough compilations of bird records begun the previous year.

I think that this has been a most interesting and successful year in the Club's history. This was in no small part due to the executive and also to the ready co-operation and enthusiasm of all members.

--D. M. Davies

FUTURE JUNIOR CLUB EVENTS

MEETINGS (No meeting on third Saturday) Y. W. C. A. RoomE

Saturday, May 2nd--7.30 p. m.

Election Night! All members are urged to turn out for this important meeting. Have your nominations ready for each position on the executive. These will be the people who will run the Club for a year beginning next September. We may have a bird quiz with Kodachromes and recorded bird songs after the election.

Saturday, May 30th--7.30 p. m.

Nature movies. Plans for summer get-to-gethers.

HIKES

Saturday, May 9th, 1959

Something may be arranged! Phone Bob Curry (LI 5-5557) or Dr. Davies (JA 9-5130) if you are interested in a hike.

Sunday, May 31st--9.00 a. m. to 3.00 p. m. (with lunch)

Mr. Verne Webster will lead a car hike past Hagersville to near Camp Oneida to see large reptile fossils and hoof prints and later to see marsh and shore birds along Lake Erie. Wear waterproof footwear. Bring lunch. Meet at King and Hess Sts. (NE corner) one block east of Queen. Extra cars will be welcome.

PENINSULA FIELD NATURALISTS

The Peninsula Field Naturalists' Club has invited members of the Hamilton Naturalists' Club to take part in their field trips.

Saturday, May 9th, 1959

Field Trip to Dr. Hurlbut's Woods--Meet at the church in North Pelham at 9.30 a. m. Bring lunch and boots.

Saturday, May 23rd, 1959

Trip to Warner's Woods. Meet at bridge at Smithville next to feed mill at 7 a. m. to see birds and wild flowers.

Sunday, May 31st, 1959

Trip to Rockhouse Point. Meet at gate East end entrance to Dunnville at 9 a. m. Shore birds and spring flowers.

F. O. N. Camp

The F. O. N. Camp held at Camp Billie Bear in Muskoka not far from Algonquin Park will be held June 27 to July 11th. The cost for the two weeks is $120.00 and includes instruction by fine naturalist-teachers, board, and lodging. You will be delighted if you go.

LOST

Our Club has lost or misplaced the collection of over 300 colour slides on nature that members use in giving talks. If you know the where-abouts of these slides, please contact the secretary.

MEMBERSHIP

Membership in the Hamilton Naturalists' Club is from May 1st , 1959, to April 30th, 1960. You will help our Membership Chairman by sending fees early to: Miss Evelyn Morris, Apt. 401-107 St. Joseph's Drive, Hamilton.

INTERNATIONAL EXHIBIT OF NATURE PHOTOGRAPHY

At the May meeting, your Directors approved the plans for our Club to sponsor an International Exhibit of Nature Photography to be shown this fall. Applications will soon be printed and those wishing to submit their photography should write to our Club address: Main Post Office, Box 384, Hamilton, Ontario.

BIRD CHECK LISTS

A check-list of the 211 species of birds known to occur in the geographical District of Timiskaming, Ontario may be purchased at 3 for 10 cents from Mr. Fred M. Helleiner, Swastika, Ontario.

A check-list of the 338 species of birds recorded in the Hamilton area may be purchased at 10¢ each or 35 for 1.00 from the Secretary of the Hamilton Naturalists' Club,Main Post Office, Box 384, Hamilton.